# Milutin Stanaćević

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## RESEARCH INTERESTS

Analog, mixed-signal and RF VLSI circuits, systems and algorithms for sensory information processing, RF backscattering sensors and RF energy harvesting, micropower implantable devices, breath analysis systems, acoustic microarrays for real-time source localization and separation, autonomous adaptive microsystems.

## EDUCATION

**The Johns Hopkins University**, Baltimore MD

Ph.D., Electrical and Computer Engineering, 2005.

Dissertation: "Mixed-Signal Micropower VLSI Systems for Biomedical Array Signal Processing"

Advisor: Gert Cauwenberghs

**The Johns Hopkins University**, Baltimore MD

M.S., Electrical and Computer Engineering, 2001.

**University of Belgrade**, Serbia

Dipl.Ing., Electrical Engineering, 1999.

## PROFESSIONAL EXPERIENCE

**Stony Brook University, Stony Brook, NY** — **September 2023 – present**
*Professor*

**Stony Brook University, Stony Brook, NY** — **September 2011 – August 2023**
*Associate Professor*

**Stony Brook University, Stony Brook, NY** — **September 2005 – August 2011**
*Assistant Professor*

**The Johns Hopkins University, Baltimore, MD** — **September 1999 – August 2005**
*Research Assistant, Adaptive Microsystems Lab*

**Tokyo Metropolitan Institute of Technology (TMIT), Tokyo, Japan** — **June – September 1998**
*Research Intern*

## AWARDS AND HONORS

- Member of the National Academy of Inventors, 2021.
- Dean's Millionaires Club Award, CEAS, Stony Brook University, 2020.
- IEEE Region 1 Technological Innovation Award, 2013.
- NSF CAREER Award, 2009.
- EMBS/Whitaker Student Contest Award, 2nd place, EMBS, San Francisco, September 2004.
- Fellowship from Yugoslav Foundation for Young Talents in Art and Sciences, Ministry of Science and Technology, Republic of Serbia, 1994 – 1999.
- Ranked 1st in the graduating class, School of Electrical Engineering, University of Belgrade, Belgrade, Serbia, 1999.

**RESEARCH GRANTS AND CONTRACTS**

[G1] *Collaborative Research: EAGER: Reliable Monitoring and Predictive Modeling for Safer Future Smart Transportation Structure,* **National Science Foundation**, 09/23-08/24, $90,000, (PI, with P. Djurić and S. Das)

[G2] *URA Visiting Scholars Program: Design of Interface Circuit for control of Quantum Computer Based on Ion Traps,* **Universities Research Association Incorporated,** 08/23-02/24, $12,000, (PI)

[G3] *Neural Hyperarray: Next-Generation neuromodulation for recovery for consciousness after brain injury,* **Stony Brook University School of Medicine 2023/2024 Targeted Research Opportunity Program – FUSION Award,** 07/23-06/25, $80,000, (co-PI, with S. Mofakham, C. Mikell and P. Djurić)

[G4] *Bio-Magnetogenetic Control of Spatially Restricted Intracellular Protein-Activity During Rodent Embryonic Neuronal Deveopment And in Neurodevelopmental Pathologies,* **Stony Brook University Biomedical Sciences Innovation Seed Grant,** 07/23-06/25, $100,000, (co-PI, with M. Shelly and S. Wong)

[G5] *Energy-Efficient Design Methodologies for ReRAM-based Deep Neural Network Accelerators on the Edge,* **Stony Brook University OVPR Seed Grant Program**, 08/22 – 02/24, $50,000, (co-PI, with E. Salman)

[G6] *Self-Powered Load Sensors for Total Knee Replacement Health Monitoring,* **National Institure of Health**, 06/22-05/27, $2,326,521 (co-PI, with S. Towfighian (Binghamton University), R. Willing (University of Western Ontario) and E. Salman)

[G7] *Collaborative Research: CPS: Medium: Scalable Intelligent Backscatter-based RF Sensor Network for Self-Diagnosis of Structures,* **National Science Foundation**, 10/21-09/24, $799,863, (co-PI, with P. Djurić, S. Das and E. Salman)

[G8] *Integrated Circuit Design for Quantum Computing Applications,* **US Department of Energy (subcontract Fermi National Accelerator Laboratory),** 07/21-06/24, $189,077, (PI)

[G9] *Controlling spatially restricted intracellular protein-activity during embryonic neuronal development using biomagnetic nanotechnologies,* **National Institure of Health**, 12/20-11/22, $431,889 (co-PI, with M. Shelly and S. Wong)

[G10] *EAGER: Breath-Based Early and Fast Detection of COVID-19 Infection,* **National Science Foundation**, 06/20-05/22, $199,359 (co-PI, with P. Gouma (Ohio State University) and A. Bowman (Ohio State University))

[G11] *CNS Core: Medium: RF-based analytics with intelligent backscattering in passive tag-to-tag networks,* **National Science Foundation**, 10/19-09/23, $949,727 (PI, with S. Das, P. Djurić and A. Athalye)

[G12] *CEINTS: Center for Engineering Intelligent Tag Network,* **SUNY Center-Scale Proposal Planning and Development Grant Program**, 09/18-08/19, $50,000 (co-PI, with S. Das, P. Djuric and E. Salman)

[G13] *NeTS: Medium: Collaborative Research: Passive Network of Tags for Smart Spaces,* **National Science Foundation**, 08/18-07/22, $800,000 (co-PI, with S. Das, P. Djuric and A. Athalye)

[G14] *SBIR Phase I: Breathalyzer for Non-invasive Disease Detection Using a Single Ammonia Sensor,* **National Science Foundation (subcontract: Health Esense, Inc)**, 07/17-07/18, $225,000 (subcontract: $44,756) (sole PI)

[G15] *CPS: Breakthrough: Charge-Recycling based Computing Paradigm for Wirelessly Powered Internet-of-Things,* **National Science Foundation**, 09/16-09/19, $425,000 (co-PI, with E. Salman)

[G16] *Design of High-Quality Sine Wave Power Source,* **North Atlantic Industries Inc.**, 06/16-12/16, $33,983 (PI)

[G17] *Design of analog and digital integrated circuits for cryogenic environment,* **US Department of Energy (subcontract Brookhaven National Laboratory)**, 09/15 - 02/18, $121,237 (PI)

[G18] *Design of mixed-signal integrated circuits for cryogenic environment,* **US Department of Energy (subcontract Brookhaven National Laboratory)**, 09/15 - 09/18, $135,586 (PI)

[G19] *New Milestone in Energy Autonomy: Novel Charge-Recycling Circuits for Wireless Power Harvesting,*

**Stony Brook Foundation: Discovery Fund Prize**, 04/15-04/17, $50,000 (co-PI, with E. Salman)

[G20] *SHB: Type I (EXP): Personalized Asthma Monitor Detecting Nitric Oxide in Breath,* **National Science Foundation**, 09/12-09/16, $599,763 (co-PI, with P. Gouma and S. Simon)

[G21] *Lifetime Characterization of Complementary Metal Oxide Semiconductors (CMOS) and Field-Programmable Gate Arrays (FPGA) operating in cryogenic environment*, **US Department of Energy (subcontract Brookhaven National Laboratory)**, 04/12 - 12/15, $188,628, (PI)

[G22] *CAREER: Spatial Sensing for Design of Miniature Sensor Array Microsystems*, **National Science Foundation**, 07/09-07/14, $400,000 (PI).

[G23] *RFID Tag in a Pill : Monitoring Drug Intake*, **Stony Brook University, School of Medicine**, 01/09-12/11, $150,000 (PI).

[G24] *Development of a self-powered sensor platform for preventing third-party intrusions into gas pipelines*, **National Grid**, 09/07-08/08, $100,000 (co-PI, with M. Gouzman).

[G25] *Semiconductor High-Energy Radiation Detector with Excellent Isotope Identification and Directional Capability*, **Department of Homeland Security**, 03/07-03/12, $3,922,000 (co-PI, with S. Luryi, A. Kastalsky and N. Lifshitz).

[G26] *Breath Analysis Device for Urea Detection*, **Medicon**, 02/07-08/07, $20,000 (co-PI, with P. Gouma).

[G27] *Integrated Antenna Array Transceiver for Adaptive Beam-forming*", **Center of Excellence in Wireless & Information Technology (CEWIT), Stony Brook University**, 01/07-01/08, $9,000 (PI)


# PATENTS

[P1] G. Cauwenberghs, M. Stanaćević and G. Zweig,*"Gradient Flow Source Localization and Separation"*, U.S. Patent 6,865,490, Issued: March 8, 2005.

[P2] P. Gouma and M. Stanaćević, *"Gas Sensor with Compensation for Baseline Variation",* U.S. Patent 8,955,367, Issued: February 17, 2015.

[P3] S. Einav, S. Sharma, M. Stanaćević and R.N. Fine, *"RFID Monitoring of Drug Regimen Compliance",* US Patent Pending, filed March 2009.

[P4] E. Salman, M. Stanaćević, T. Wan, Y. Karimi, "*Radio Frequency Energy Harvesting Apparatus and Method for Utilizing the Same*," US Patent 10,846,581, Issued: November 24, 2020.

[P5] M. Stanaćević, S. Das, P. Djurić, A. Athalye, J. Ryoo and Y. Karimi, "*Method for Passive Wireless Channel Estimation in Radio Frequency Network and Apparatus for Same*," US Patent 11,763,106, Issued: October 2023.

[P6] E. Salman, M. Stanaćević, T. Wan, Y. Karimi, Y. Huang, "*Ultra Low Power Core for Lightweight Encryption*," US Patent Pending, filed May 2022.

**INVITED PRESENTATIONS**

- "Real-time Low-power VLSI Microsystem for Smart Acoustic Interfaces", The IEEE Long Island Chapter of Circuits and Systems Society, Stony Brook, NY, January 2016.
- "Power Harvesting and Integrated Sensing in Implantable Devices", The IEEE Long Island Chapter of Enngineering in Medicine and Biology Society, Melville, NY, May 2014.
- "Wireless Power Transfer for Small Size Implantable Medical Devices ", The 10$^{th}$ International Conference and Expo on Emerging Technologies for a Smarter World, Melville, NY, October 2013.
- "Adaptive VLSI Systems for Acoustic Source Localization and Separation", Michigan State University, East Lansing, MI, April 2010.
- "Micropower Adaptive VLSI Systems for Acoustic Source Detection, Localization and Separation", *2009 CMOS Emerging Technologies Workshop*, Vancouver, Canada, Sep. 2009.
- "Adaptive VLSI Microsystems for Acoustic Source Localization and Separation", *Hofstra Computer Science Research Seminar*, Hofstra University, Sep. 2006.
- "Micropower Adaptive VLSI Systems for Acoustic Source Localization and Separation", North Carolina State University, Mar. 2005.
- "Gradient Flow Independent Component Analysis", *Neural Information Processing Systems (NIPS'2003) Workshop "ICA: Sparse Representations in Signal Processing,"* Vancouver, Canada, Dec. 2003.

**PROFESSIONAL ACTIVITIES**

- *Associate Editor,* IEEE Transaction on Biomedical Circuits and Systems, 2012.-2017.
- *Associate Editor,* Frontiers in Neuromorphic Engineering
- *Editoral Board,* Chips, MDPI Journal
- *Guest Editor,* IEEE Transaction on Biomedical Circuits and Systems, Special Issue on ISCAS 2011.
- *Guest Editor,* Analog Integrated Circuits and Signal Processing, Special Issue on MWSCAS 2021.
- *Associate Editor,* Int. Conf. of the IEEE Engineering in Medicine and Biology Society (EMBC), 2014.-
- *Technical Committee Member :*
  - IEEE Circuits and Systems Society: Sensory Systems
  - IEEE Circuits and Systems Society: Biomedical Circuits & Systems
- *Publication Chair :*
  - IEEE Biomedical Circuits and Systems Conference, BIOCAS 2011.
- *Organizing Committee Member and Special Session Chair:*
  - Artificial Olfaction and Electronic Nose (ISOEN 2011)

# GRADUATE ADVISEES

*Ph.D. Advisees Alumni:*

‒   Xiao Sha, Ph.D., Dec 2022., now with Synopsys, Inc.
Thesis: *Autonomous Networks of Self-powered Sensors: Communication Link Analysis and System-on-chip*

‒   Manav Jain, Ph.D., May 2021., (co-advisor E. Salman), now with Intel, Corp.
Thesis: *Frontend Electronic System for a Triboelectric Harvester in a Smart Knee Implant*

‒   Yuanfei Huang, Ph.D, Dec 2020., now with Qualcomm
Thesis: *RF Tags Design for Backscatter-Based Tag-To-Tag Communications*

‒   Wenbin Hou, Ph.D, Aug 2019., (co-advisor G. De Geronimo), now with Analog Devices, Inc.
Thesis: *Ultra-Low Noise Front-End and Voltage Regulation ASICs for Radiation Detectors in Space and Physics Applications*

‒   Karimi Yasha, Ph.D, Jan 2019., now with iota Biosciences
Thesis: *Energy-efficient RF powered tag-based sensory network*

‒   Jie Ma, Ph.D, December 2015., (co-advisor G. De Geronimo), now with ALA Scientific Instruments, Inc.
Thesis: *Hot Carrier Study of MOSFET at 300K and 77K*

‒   Jinghui Jian, Ph.D, December 2015., now with Lorentz Solution, Inc.
Thesis: *Co-Design of Wireless Power Transfer and Data Links for Next Generation Passive Devices*

‒   Shuo Li, Ph.D, May 2015., now with Second Sight, Inc.
Thesis: *Smart Sensing: Mixed-Signal VLSI Implementation of Gradient Flow Localization and Separation*

‒   Yingkan Lin, Ph.D, Oct 2014., now with Apple, Inc.
Thesis: *Design of Low-power, Low-noise Readout Circuits for Sensory Microsystems*

‒   Xiao Yun, Ph.D, Aug. 2010., now with Synopsys, Inc.
Thesis: *Front-End Read-Out System for Radiation Scintillation Detector*

‒   Donghwi Kim, Ph.D., May 2009., now with Intel Corp.
Thesis: *Low-power Low-data-rate Analog Front-end for Neural Recording System*

*Current Ph.D. Advisees:*
‒   Dyumaan Arvind, Ph.D. Candidate, expected 2023
‒   Puyang Zheng, Ph.D. Candidate, expected 2023
‒   Yang Xie, Ph.D. Candidate, expected 2025
‒   Pengxu Chen, Ph.D. Candidate, expected 2025
‒   Hosein Haghshenas, Ph.D. Candidate, expected 2026
‒   Abeer Ahmad, Ph.D. Candidate, co-advisor S. Das

*M.S. Advisees Alumni:*
‒   Seongmin Han, M.S., May 2018.
‒   Farhana Choudhury, M.S., May 2018.
‒   Daniel Khemraj, M.S., May 2017., now with Texas Instruments
‒   Sai Theja Lolla, M.S., May 2017.
‒   Yi-Shin Yeh, M.S., May 2011.
‒   Aditya Shyam Ambre, M.S., May 2011., now with Qualcomm
‒   Aniruddha Dayalu, M.S., Dec 2008., now with ON Semiconductor
‒   Yi Huang, M.S., Dec 2008., now with Interstil Corp.
‒   Ram Gandhi, M.S., Dec 2006., now with Intel Corp.

# PUBLICATIONS

## Book Chapters

[B1]  M. Stanaćević, Y. Lin, and E. Salman, "Analysis and Design of 3-D Potentiostat for Deep Brain Implantable Devices," *Neural Computation, Neural Devices, and Neural Prosthesis*, ed. Z. Yang, Springer, 2014

[B2]  M. Stanaćević and G. Cauwenberghs, "Micropower Adaptive VLSI Systems for Acoustic Source Detection, Localization and Separation," *Integrated Microsystems: Emerging Materials, MEMs, Photonic and Bio Interfaces*, ed. K.Iniewski, Artech House, 2011.

[B3]  M. Mollazadeh, K. Murari, C. Sauer, N. Thakor, M. Stanaćević and G. Cauwenberghs, "Wireless Integrated Neurochemical and Neuropotential Sensing," *VLSI Circuits for Biomedical Applications*, ed. K. Iniewski, Artech House, 2008.

## Journal Publications

[J1]  A. Khalifa, M. Nasrollahpour, A. Nezaratizadeh, X. Sha, M. Stanaćević, N.X. Sun and S.S. Cash, "Fabrication and Assembly Techniques for Sub-mm Battery-Free Epicortical Implants," Micromachines, vol. 14(2), pp. 476, 2023.

[J2]  A. Ahmad, X. Sha, A. Athalye, S.R. Das, K. Caylor, B. Glisić, M. Stanaćević and P.M. Djurić, "Dispersed passive RF-sensing for 3D structural health monitoring," ITU Journal on Future and Evolving Technologies, vol. 3(2), pp. 535-545, 2022.

[J3]  M.C. Exline, M. Stanaćević, A.S. Bowman, P.-I. Gouma, "Exhaled nitric oxide detection for diagnosis of COVID-19 in critically ill patients," *PloS One*, vol. 16(10), pp. e0257644, 2021.

[J4]  M. Jain, N.A. Hossain, S. Towfighian, R. Willing, M. Stanaćević and E. Salman, "Self-Powered Load Sensing Circuitry for Total Knee Replacement," *IEEE Sensor Journal*, 2021.

[J5]  M. Stanaćević, A. Athalye, Z.J. Haas, S.R. Das and P.M. Djurić, "Backscatter Communication with Passive Receivers: From Fundamentals to Applications," *ITU Journal on Future and Evolving Technologies,* vol. 1(1), pp. 1-11, 2020.

[J6]  E. Vernon, G. De Geronimo, J. Baldwin, W. Chen, J. Fried, G. Giacomini, A. Kuczewski, J. Kuczewski, J. Mead, A. Miceli, J.S. Okasinski, D. Pinelli, O. Quaranta, A.K. Rumaiz, P. Siddons, G. Smith, M. Stanaćević and R. Woods, "Development of a High Rate Front-end ASIC for X-ray Spectroscopy and Diffraction Applications," *IEEE Trans. Nuclear Science*, vol. 67(4), pp. 752-759, 2020.

[J7]  A. Khalifa, Y. Liu, Y. Karimi, Q. Wang, A. Eisape, M. Stanaćević, N. Thakor, Z. Bao and R. Etienne-Cummings, "The Microbead: A 0.009 mm3 implantable wireless neural stimulator," *IEEE Trans. Biomedical Circuits and Systems,* vol. 13(5), pp. 971-985, 2019.

[J8]  E. Vernon, G. De Geronimo, A. Bolotnikov, M. Stanaćević, J. Fried, L. O. Giraldo, G. Smith, K. Wolniewicz, K. Ackley, C. Salwen and J. Triolo, "Front-end ASIC for spectroscopic readout of virtual Frisch-grid CZT bar sensors," *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment,* vol. 940, pp. 1-11, 2019.

[J9]  T. Wan, Y. Karimi, M. Stanaćević and E. Salman, "AC Computing Methodology for RF-powered IoT Devices," *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, vol. 27(5), pp. 1017-1028, 2019.

[J10]  Y. Karimi, Y. Lin, G. Jodhani, M. Stanaćević and P.-I. Gouma, "Single Exhale Biomarker Breathalyzer," *Sensors*, vol. 19(2), 270, 2019.

[J11]  J. Ryoo, J. Jian, A. Athalye, S.R. Das and M. Stanaćević, "Design and Evaluation of 'BTTN': A Backscattering Tag-to-Tag Network," *IEEE Internet of Things Journal,* vol. 5(4), pp. 2844-2855, 2018.

[J12]  A. Khalifa, Y. Karimi, Q. Wang, S. Garikapati, W. Montlouis, M. Stanaćević, N. Thakor and R. Etienne-Cummings, "The Microbead: A Highly Minituarized Wirellesly Powered Implantable Neural Stimulating

System," *IEEE Trans. Biomedical Circuits and Systems*, vol. 12(3), pp. 521-531, 2018.

[J13]   T. Wan, Y. Karimi, M. Stanaćević and E. Salman, "Perspective Paper - Can AC Computing Be an Alternative for Wirelessly Powered IoT Devices?," *IEEE Embedded Systems Letters,* vol. 9(1), pp. 13-16, 2017.

[J14]   P. Gouma, L. Wang, S. Simon and M. Stanaćević, "Novel Isoprene Sensor for a Flu Virus Breath Monitor," *Sensors*, vol. 17(1), 199., 2017.

[J15]   M. Stanaćević, S. Li and G. Cauwenberghs, "Micropower Mixed-signal VLSI Independent Component Analysis for Gradient Flow Acoustic Source Separation," *IEEE Transactions on Circuits and Systems I: Regular Papers*, vol. 63(7), pp. 972-981, 2016.

[J16]   P. Gouma, S. Simon, and M. Stanaćević, "Nano-sensing and catalysis technologies for managing food-water-energy (FEW) resources in farming," *Materials Today Chemistry*, vol. 1, pp. 40-45, 2016.

[J17]   Z. Gan, E. Salman, and M. Stanaćević, "Figures-of-Merit to Evaluate the Significance of Switching Noise in Analog Circuits," *IEEE Transactions on Very Large Scale Integration (VLSI) Systems (TVLSI)*, vol. 23(12), pp. 2945-2956, 2015.

[J18]   P. Gouma, M. Stanaćević and S. Simon, "An overview of the translation of selective semiconducting gas sensors from first results to automotive exhaust gas monitors to a platform for breath-based diagnostics," *Translational Materials Research*, vol. 2(4), pp.045001, 2015.

[J19]   P. Gouma, A. Prasad and M. Stanaćević, "Selective Nanosensor Array Microsystem for Exhaled Breath Analysis," *Journal of Breath Research*, vol. 5(3), 2011.

[J20]   X. Yun, M. Stanaćević and S. Luryi, "Low-Power Amplifier for Readout Interface of Semiconductor Scintillator," *IEEE Trans. Nuclear Science*, vol. 58(4), pp. 2129 – 2136, 2011.

[J21]   S. Luryi, A. Kastalsky, M. Gouzman, N. Lifshitz, O. Semyonov, M. Stanaćević, A. Subashiev, V. Kuzminsky, W. Cheng, V. Smagin, Z. Chen, J.H. Abeles, W.K. Chan and Z.A. Shellenbarger, "Epitaxial InGaAsP/InP photodiode for registration of InP scintillation", *Nucl. Instr. and Meth. in Phys. Research A*, vol. 622, pp. 113 – 119, 2010.

[J22]   L. Wang, K. Kalyanasundaram, M. Stanaćević and P. Gouma, "Nanosensor Device for Breath Acetone Detection", *Sensor Letters*, vol. 8(5), pp. 709 – 712, 2010.

[J23]   P. Gouma, K. Kalyanasundaram, L. Wang, X. Yun and M. Stanaćević, "Nanosensor and Breath Analyzer for Ammonia Detection in Exhaled Human Breath", *IEEE Sensor Journal*, vol. 10(1), pp. 49 – 53, 2010.

[J24]   K.-S. Park, J. Lee, M. Stanaćević, S. Hong and W.-D. Cho, "Iterative Object Localization Algorithm Using Visual Images with a Reference Coordinate", *EURASIP Journal on Image and Video Processing*, Article ID 256896, 2008.

[J25]   M. Stanaćević, K. Murari, A. Rege, G. Cauwenberghs and N. Thakor, "VLSI Potenstiostat Array with Oversampling Gain Modulation for Wide-Range Neurotransmitter Sensing," *IEEE Trans. Biomedical Circuits and Systems*, vol. 1(1), pp. 63-72, 2007.

[J26]   R. Genov, M. Stanaćević, M. Naware, G. Cauwenberghs and N. Thakor, "16-Channel Integrated Potentiostat for Distributed Neurochemical Sensing," *IEEE Trans. Circuits and Systems I: Regular Papers*, vol. 53(11), pp. 2371 – 2376, 2006.

[J27]   M. Stanaćević and G. Cauwenberghs, "Micropower Gradient Flow VLSI Acoustic Localizer," *IEEE Trans. On Circuits and Systems I: Regular Papers,* vol. 52(10), pp. 2148 – 2157, 2005.

[J28]   C. Sauer, M. Stanaćević, G. Cauwenberghs and N. Thakor, "Power Harvesting and Telemetry in CMOS for Implanted Devices," *IEEE Trans. on Circuits and Systems I: Regular Papers*, vol. 52(12), pp. 2605 – 2613, 2005.

[J29]   K. Murari, M. Stanaćević, G. Cauwenberghs and N. Thakor, "Wide-Range, Picoampere-Sensitivity Multichannel VLSI Potentiostat for Neurotransmitter Sensing," *IEEE Engineering in Medicine and Biology Magazine,* vol. 24(6), pp. 23-29, 2005.

# Conference Proceedings

[C1] PY. Zheng, X. Sha, D. Arvind, Y. Xie and M. Stanaćević, "Ultra-low $I_Q$ Fully Integrated NMOS LDO with Enhanced Load Regulation and Startup for RF Energy Harvesting Sensors," *IEEE 66th International Midwest Symposium on Circuits and Systems (MWSCAS'23)*, Aug. 2023.

[C2] A. Khalifa, M. Nasrollahpour, A. Nezaratizadeh, X. Sha, M. Stanaćević, N.X. Sun, and S. Cash, "Fabrication and Assembly Techniques for Distributed Battery-Free Brain Implants," *Proc. IEEE International Symposium on Circuits and Systems Conference (ISCAS'23)*, May 2023.

[C3] A. Ahmad, X. Sha, A. Athalye, S.R. Das, P.M. Djurić and M. Stanaćević, "Amplitude and Phase Estimation of Backscatter Tag-to-tag Channel," *Proc. IEEE International Symposium on Circuits and Systems Conference (ISCAS'22)*, May 2022.

[C4] X. Sha, P. Zheng and M. Stanaćević, "High Sensitivity Near-zero Power Wakeup Receiver for Backscattering RF Tags," *Proc. IEEE International Symposium on Circuits and Systems Conference (ISCAS'22)*, May 2022.

[C5] M. Jain, M. Stanaćević, R. Willing, S. Towfighian and E. Salman, "Wireless Power Transfer for Smart Knee Implants," *Proc. IEEE International Symposium on Circuits and Systems Conference (ISCAS'22)*, May 2022.

[C6] A. Ahmad, X. Sha, M. Stanaćević, A. Athalye, P.M. Djurić and S.R. Das, " Enabling Passive Backscatter Tag Localization Without Active Receivers*," Proc. 19th ACM Conference on Embedded Networked Sensor Systems (SenSys 2021),* November 2021.

[C7] A. Ahmad, X. Sha, A. Athalye, S.R. Das, P.M. Djurić and M. Stanaćević, "Collaborative Backscatter Based on Phase Channel Estimation in Passive RF Tag Networks," *Proc. 11th IEEE International Conference on RFID Technology and Applications (IEEE RFID-TA 2021),* October 2021.

[C8] M. Stanaćević, A. Ahmad, X. Sha, A. Athalye, S.R. Das, K. Caylor, B. Glisić and P.M. Djurić, "RF Backscatter-Based Sensors for Structural Health Monitoring," Forth International Balkan Conference on Communications and Networking (BalkanCom'21), September 2021.

[C9] X. Sha, PY. Zheng and M. Stanaćević, "1.81 kHz Relaxation Oscillator with Forward Bias Comparator and Leakage Current Compensation Based Techniques," *Proc. 34$^{th}$ IEEE International System-on-Chip Conference (SOCC'21)*, September 2021.

[C10] PY. Zheng, X. Sha and M. Stanaćević, "Analysis of the Sub-uA Fully Integrated NMOS LDO for Backscattering System," *Proc. 34$^{th}$ IEEE International System-on-Chip Conference (SOCC'21)*, September 2021.

[C11] X. Sha, PY. Zheng, Y. Karimi and M. Stanaćević, "Capacitive Link for Data Communication Between Free Floating mm-sized Brain Implants," *Proc. IEEE International Symposium on Medical Measurements and Applications (MeMeA'20)*, June 2021.

[C12] Y. Huang, A. Athalye, S.R. Das, P.M. Djurić and M. Stanaćević, "RF Energy Harvesting and Management for Near-zero Power Passive Devices," *Proc. IEEE International Symposium on Circuits and Systems Conference (ISCAS'21)*, May 2021.

[C13] X. Sha, Y. Huang, T. Wan, Y. Karimi, S.R. Das, P.M. Djurić and M. Stanaćević, "A Self-Biased Low Modulation Index ASK Demodulator for Implantable Devices," *Proc. IEEE International Symposium on Circuits and Systems Conference (ISCAS'20)*, May 2020.

[C14] A. Ahmad, Y. Huang, X. Sha, A. Athalye, M. Stanaćević, S.R. Das and P.M. Djurić, "On Measuring Doppler Shifts between Tags in a Backscattering Tag-to-Tag Network with Applications in Tracking," *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 9055-9059, May 2020.

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